WHAT IS CLAIMED IS:

1. A phage display library, comprising:

(a) a plurality of fragments of a substantially complete digest of substantially the entire genome of an organism; and

(b) a plurality of phages, each of said phages containing one of said fragments.

2. The phage display library of claim 1, wherein said organism is a pathogen selected from the group consisting of a virus, a bacterium, a yeast and a parasite.

3. The phage display library of claim 2, wherein said virus is selected from the group consisting of retrovirus species, hepatitis species, influenza species, human papillomavirus, herpes species, RSV and cytomegalovirus.

4. The phage display library of claim 2, wherein said bacterium is selected from the group consisting of Mycobacterium tuberculosis and shigella.

5. The phage display library of claim 2, wherein said parasite is selected from the group consisting of plasmodium species, leishmania species, entamoeba species, giardia species, trichomonas species and trypanosoma species.

6. A method of preparing a vaccine, comprising the steps of:

(a) preparing a complete pepscan of at least one polypeptide of an organism; and

(b) providing a vaccine carrier for said complete pepscan.

7. The method of claim 6, wherein said vaccine carrier includes a pharmaceutically appropriate buffer.

8. The method of claim 6, wherein said complete pepscan is produced by synthesizing peptides.

9. The method of claim 6, wherein said complete pepscan is produced by a plurality of bacteria, said peptides are synthesized by said bacteria.

10. The method of claim 6, wherein said vaccine carrier includes a plurality of phages, said peptides are displayed by said phages.

11. The method of claim 10, wherein said phages are filamentous phages.

12. The method of claim 11, wherein each of said peptides is presented by a coat protein of said filamentous phages.

13. The method of claim 12, wherein said coat protein is selected from the group consisting of pIII and pVIII.

14. The method of claim 6, wherein said vaccine carrier includes an eukaryotic expression vector and said complete pepscan is represented by said vector.

15. A method of vaccinating an organism, comprising the steps of:

(a) preparing a vaccine by the method of claim 6; and

(b) administering said vaccine to the organism to be vaccinated.

16. The method of claim 15, wherein said complete pepscan is produced by synthesizing peptides.

17. The method of claim 15, wherein said vaccine carrier includes a plurality of phages, said peptides are displayed by said phages.

18. The method of claim 17, wherein said phages are filamentous phages.

19. The method of claim 18, wherein each of said peptides is presented by a coat protein of said filamentous phages.

20. The method of claim 19, wherein said coat protein is selected from the group consisting of pIII and pVIII.

21. A method of preparing a discontinuous library of an organism having a genome, comprising the steps of:

(a) at least partially digesting at least a portion of the genome of the organism to form a plurality of fragments, said portion representing at least a part of a single biological unit;

(b) ligating said fragments to form at least one ligated fragment; and

(c) at least partially digesting said ligated fragment to form at least one conformational fragment.

22. The method of claim 21, wherein said biological unit is a polypeptide.

23. The method of claim 21, further comprising:

(d) providing a display carrier for said at least one conformational fragment.

24. The method of claim 23, wherein said display carrier includes at least one bacterium and said at least one conformational fragment is inserted into genetic material within said at least one bacterium.

25. The method of claim 23, wherein said display carrier includes at least one phage and said at least one conformational fragment is inserted into genetic material within said phage.

26. The method of claim 25, wherein said phage is a filamentous phage.

27. The method of claim 26, wherein said at least one conformational fragment is inserted into a gene for a coat protein of said filamentous phage.

28. The method of claim 27, wherein said coat protein is selected from the group consisting of pIII and pVIII.

29. The method of claim 23, wherein said display carrier includes an eukaryotic expression vector and said at least one conformational fragment is inserted into said vector.

30. A discontinuous library of the genome of an organism, comprising at least one conformational fragment, said at least one conformational fragment being a digestion product of a ligation product of at least two fragments from a digest of a portion of the genome of the organism, said portion representing at least a part of a single biological unit.

31. The discontinuous library of claim 30, further comprising a display carrier for displaying said at least one conformational fragment.

32. The discontinuous library of claim 31, wherein said display carrier includes at least one bacterium and said at least one conformational fragment is inserted into genetic material of said at least one bacterium.

33. The discontinuous library of claim 31, wherein said display carrier includes at least one phage, said at least one conformational fragment is inserted into genetic material of said at least one phage.

34. The discontinuous library of claim 33, wherein said at least one phage is a filamentous phage.

35. The discontinuous library of claim 34, wherein said genetic material is a gene for a coat protein of said filamentous phage.

36. The discontinuous library of claim 35, wherein said coat protein is selected from the group consisting of pIII and pVIII.

37. The discontinuous library of claim 31, wherein said display carrier is a eukaryotic expression vector, said at least one conformational fragment is inserted into said vector.

38. A method of preparing a conformational peptide, comprising the steps of:

(a) preparing a discontinuous library of an organism according to the method of claim 21;

(b) inserting said discontinuous library into an expression system; and

(c) obtaining the conformational peptide from said expression system.

39. The method of claim 38, wherein said expression system includes at least one bacterium, said discontinuous library is inserted into genetic material of said at least one bacterium.

40. The method of claim 38, wherein the conformational peptide is obtained from said expression system by isolating the conformational peptide, such that the conformational peptide is at least a partially purified conformational peptide.

41. The method of claim 38, wherein said expression system includes at least one phage and said discontinuous library is inserted into genetic material of said at least one phage.

42. The method of claim 41, wherein said at least one phage is a filamentous phage.

43. The method of claim 42, wherein said genetic material is a gene for a coat protein of said filamentous phage.

44. The method of claim 43, wherein said coat protein is selected from the group consisting of pIII and pVIII.

45. A conformational peptide, comprising a peptide, the sequence of said peptide being determined by a digestion product of a ligation product of at least two fragments of at least a partial digest of at least a portion of the genome of an organism, said portion representing at least a part of a single biological unit.

46. The conformational peptide of claim 45, wherein said peptide is obtained from an expression system, said expression system including said digestion product.

47. The conformational peptide of claim 45, wherein said expression system includes at least one phage, said digestion product is inserted into genetic material of said at least one phage.

48. The conformational peptide of claim 47, wherein said at least one phage is a filamentous phage.

49. The conformational peptide of claim 48, wherein said genetic material is a gene for a coat protein of said filamentous phage.

50. The conformational peptide of claim 49, wherein said coat protein is selected from the group consisting of pIII and pVIII.

51. A method of preparing a vaccine, comprising:

(a) preparing a discontinuous library according to the method of claim 21; and

(b) providing a vaccine carrier for said discontinuous library.

52. The method of claim 51, wherein said vaccine carrier includes a pharmaceutically appropriate buffer.

53. The method of claim 51, wherein said discontinuous library is produced by a plurality of bacteria, said peptides are synthesized by said bacteria.

54. The method of claim 51, wherein said vaccine carrier includes at least one phage and said discontinuous library is inserted into genetic material of said at least one phage.

55. The method of claim 54, wherein said at least one phage is a filamentous phage.

56. The method of claim 55, wherein said genetic material is a gene for a coat protein of said filamentous phage.

57. The method of claim 56, wherein said coat protein is selected from the group consisting of pIII and pVIII.

58. The method of claim 51, wherein said vaccine carrier includes an eukaryotic expression vector and said discontinuous library is inserted into said vector.

59. A method of vaccinating an organism, comprising:

(a) preparing a vaccine according to the method of claim 51; and

(b) administering said vaccine to the organism to be vaccinated.

60. The method of claim 59, wherein said discontinuous library is produced by a plurality of bacteria, said peptides are synthesized by said bacteria.

61. The method of claim 59, wherein said vaccine carrier includes at least one phage, said discontinuous library is inserted into genetic material of said at least one phage.

62. The method of claim 61, wherein said at least one phage is a filamentous phage.

63. The method of claim 62, wherein said genetic material is a gene for a coat protein of said filamentous phage.

64. The method of claim 63, wherein said coat protein is selected from the group consisting of pIII and pVIII.

65. The method of claim 59, wherein said vaccine carrier includes an eukaryotic expression vector, said discontinuous library is inserted into said vector.

66. A method of detecting an antibody for binding at least one discontinuous epitope of a single biological unit of a first organism, comprising:

(a) preparing a vaccination entity, said vaccination entity being selected from the group consisting of a discontinuous library prepared according to the method of claim 21 and at least a portion of the single biological unit of the first organism;

(b) preparing immune material by administering said vaccination entity to a second organism;

(c) preparing a screening entity of the first organism, said screening entity being selected from the group consisting of a discontinuous library prepared according to the method of claim 21 and at least a portion of the single biological unit of the first organism, such that said screening entity and said vaccination entity are not identical; and

(d) detecting the antibody for binding the discontinuous epitope by screening said screening entity with said immune material.

67. The method of claim 66, wherein said immune material includes serum containing at least one antibody.

68. The method of claim 66, wherein said immune material includes a monoclonal antibody.

69. The method of claim 66, wherein said immune material includes polyclonal antibodies.

70. A method of producing a passive vaccine against a first organism, comprising:

(a) detecting an antibody for binding at least one discontinuous epitope of a single biological unit of the first organism according to the method of claim 66; and

(b) providing a vaccine carrier for said antibody.

71. The method of claim 70, wherein said immune material includes serum containing at least one antibody.

72. The method of claim 70, wherein said immune material includes a monoclonal antibody.

73. The method of claim 70, wherein said immune material includes polyclonal antibodies.

74. A passive vaccine against a first organism, comprising at least one antibody for binding at least one discontinuous epitope of a single biological unit of the first organism, said antibody being prepared according to the method of claim 66, and a vaccine carrier.

75. The passive vaccine of claim 74, wherein said immune material includes serum containing at least one antibody.

76. The passive vaccine of claim 74, wherein said immune material includes a monoclonal antibody.

77. The passive vaccine of claim 74, wherein said immune material includes polyclonal antibodies.

78. A method of passively vaccinating an organism, comprising administering the passive vaccine prepared according to claim 74 to the organism.

79. A diagnostic tool for detecting a first organism, comprising:

(a) an antibody for binding at least one discontinuous epitope of a single biological unit of the first organism, said antibody being prepared by screening a screening entity with immune material from a second organism to detect said antibody, said screening entity including at least one digestion product of at least one ligation product of digestion fragments of at least a portion of the genome of the organism, said portion representing at least a part of a single biological unit; and

(b) a detection assay for determining when said antibody is bound to said at least one discontinuous epitope of the organism.

80. The diagnostic tool of claim 79, wherein said detection assay employs a detection moiety attached to said antibody.

81. The diagnostic tool of claim 79, wherein said detection assay employs a gradient, and a location of said antibody within said gradient is

dictated by said antibody binding to said at least one discontinuous epitope of the organism.

82. The diagnostic tool of claim 79, wherein said detection assay employs a chromatograph, and a location of said antibody within said chromatograph is dictated by said antibody binding to said at least one discontinuous epitope of the organism.

83. A method for determining a structure of a protein having an identified gene, comprising the steps of:

(a) preparing a conformational peptide of the protein from said gene according to the method of claim 38;

(b) screening said conformational peptide with a molecule, said molecule being characterized by having an interaction with the protein;

(c) determining a sequence of said conformational peptide; and

(d) deducing the structure of the protein from said sequence.

84. The method of claim 83, wherein said molecule is an antibody, said antibody is for binding to at least one discontinuous epitope of the protein.

85. The method of claim 83, wherein said molecule is a ligand, said ligand is for binding to the protein.

86. The method of claim 83, wherein said molecule is a mimotope, said mimotope is for binding a mimotope binding site of the protein.

87. A filter for determining if a theoretical structure of a protein is non-biological, comprising:

(a) a dipeptide juxtaposition of the protein, said dipeptide juxtaposition being dictated by a sequence of a conformational peptide of the protein, said sequence being determined by a digestion product of a ligation product of at least two fragments of at least a partial digest of at least a portion of the genome of an organism, said portion being characterized as representing at least a part of a single biological unit; and

(b) an algorithm for comparing said dipeptide juxtaposition to the theoretical structure and for determining if the theoretical structure is non-biological.

88. A method of obtaining an antibody for binding at least one discontinuous epitope of a single biological unit of a first organism, comprising the steps of:

(a) preparing a vaccination entity of the first organism;

(b) administering said vaccination entity to a second organism for producing the antibody; and

(c) detecting the antibody for binding at least one discontinuous epitope of the single biological unit of the first organism, according to the method of claim 66.

89. The method of claim 88, wherein said single biological unit is a polypeptide.

90. The method of claim 88, further comprising providing a display carrier for said discontinuous library.

91. The method of claim 90, wherein said display carrier includes at least one bacterium, said discontinuous library is inserted into genetic material within said at least one bacterium.

92. The method of claim 90, wherein said display carrier includes at least one phage, said discontinuous library is inserted into genetic material within said phage.

93. The method of claim 90, wherein said phage is a filamentous phage.

94. The method of claim 91, wherein said discontinuous library is inserted into a gene for a coat protein of said filamentous phage.

95. The method of claim 92, wherein said coat protein is selected from the group consisting of pIII and pVIII.

96. The method of claim 90, wherein said display carrier includes an eukaryotic expression vector and said discontinuous library is inserted into said vector.

97. A vaccine, comprising a vaccine prepared according to the method of claim 6.

98. The method of claim 97, wherein said vaccine carrier includes a pharmaceutically appropriate buffer.

99. The method of claim 97, wherein said complete pepscan is produced by synthesizing peptides.

100. The method of claim 97, wherein said complete pepscan is produced by a plurality of bacteria, said peptides are synthesized by said bacteria.

101. The method of claim 97, wherein said vaccine carrier includes a plurality of phages, said peptides are displayed by said phages.

102. The method of claim 101, wherein said phages are filamentous phages.

103. The method of claim 102, wherein each of said peptides is presented by a coat protein of said filamentous phages.

104. The method of claim 103, wherein said coat protein is selected from the group consisting of pIII and pVIII.

105. The method of claim 97, wherein said vaccine carrier includes an eukaryotic expression vector and said complete pepscan is represented by said vector.

106. A diagnostic tool for detecting an antibody for binding an epitope of an organism having a genome, comprising:

(a) a conformational unit, said conformational unit selected from the group consisting of a conformational peptide of the organism prepared according to claim 38 and a discontinuous library of the organism prepared according to the method of claim 21; and

(b) a detection assay for determining when said conformational unit is bound by the antibody.

107. The diagnostic tool of claim 106, wherein said detection assay employs a detection moiety attached to said conformational unit.

108. The diagnostic tool of claim 106, wherein said detection assay employs a gradient, and a location of said conformational unit within said gradient is dictated by the antibody binding to said conformational unit.

109. The diagnostic tool of claim 106, wherein said detection assay employs a chromatograph, and a location of said conformational unit within said chromatograph is dictated by the antibody binding to said conformational unit.

110. A method of detecting an antibody for binding an epitope of an organism having a genome, comprising the steps of:

(a) incubating said conformational unit of the diagnostic tool of claim 106 with a sample containing the antibody; and

(b) performing said detection assay of the diagnostic tool of claim 106 for determining when said conformational unit is bound by the antibody.

111. A method of detecting a first organism, comprising the steps of:

(a) incubating said antibody of the diagnostic tool of claim 79 with a sample containing at least one discontinuous epitope of the first organism; and

(b) performing said detection assay for determining when said antibody is bound to said at least one discontinuous epitope of the organism.

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